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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,268	11/19/2003	Jozef Brcka	TAZ-248	7396

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EXAMINER	
DHINGRA, RAKESH KUMAR	
ART UNIT	PAPER NUMBER
1763	

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/717,268	BRCKA ET AL.	
	Examiner	Art Unit	
	Rakesh K. Dhingra	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *5,7-10,14,16 and 18-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,11-13,15 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 November 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *04/04,04/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, Species 1 (Claims 1-4, 6, 11-13, 15 and 17) in the reply filed on 12/15/05 is acknowledged. Accordingly, Claims 5, 7-10, 14, 16, 18-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and species, there being no allowable generic or linking claim.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

1) Figure 3 – Reference number "H sub.1" is not shown in drawing as disclosed in Paragraph 0075, line 6;

2) Figure 4 – Reference number "25" is not shown in drawing as disclosed in Paragraph 0078, line 4.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required

corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

1) Paragraph 0073, line 1 – it is suggested to verify correctness of "antenna element 50" since relevant drawing (Figure 4) shows antenna with reference no. 40;

2) Paragraph 0074, line 3 – it is suggested to replace "through which may be considered" with "through which current may be considered";

3) Paragraph 0075, line 12 – it is suggested to replace "adjacent segments 46 (Fig. 2O and 2F)" with "into adjacent segments 46 (Fig. 2D and 2F)";

4) Paragraph 0078, line 5 – it is suggested to verify correctness of the sentence "Such an element ----- in more detail in Figure 4A" since Fig. 2D does not pertain to antenna element, and also Figure 2E does not pertain to plasma power distribution;

5) Paragraph 0079, line 11 – it is suggested to replace "large cross-sections 45a" with " large cross-sections 46a";

6) Paragraph 0084, line 6 – it is suggested to replace "low-efficiency sections 45f" with " low-efficiency sections 46f";

7) Paragraph 0084, line 13 – it is suggested to verify the sentence "The apparatus ------ of the antennas 40" since window 31 is shown in Figure 1A and not in Figure 1;

8) Paragraph 0089, line 1 – it is suggested to replace "antenna 50d" with "antenna 40i" as per Figure 6;

9) Paragraph 0067, line 4 – it is suggested to verify the "Patent number 6,534,493" since this patent pertains to some different subject matter (Alpha beta amino acids ------- protease inhibitors).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drewery et al (US Patent No. 6,287,435) in view of Pu et al (US Patent No. 6,825,618).

Regarding Claim 1: Drewery et al teach an ICP source apparatus (Figures 1, 6, 7) for producing a high-density inductively coupled plasma in a vacuum chamber 501 for processing a semiconductor wafer therewith, the source comprising:

a dielectric chamber wall formed of at least one section 33 (Fig. 6) of dielectric material (window) and having a vacuum side and an atmospheric side;

a peripheral ionization source 503 including an RF coil assembly (antenna) 450 {Figure 7} on the atmospheric side of the dielectric chamber wall, and a deposition baffle/shield (protective shield) 26 on the vacuum side of the dielectric chamber wall. Drewery et al also teach that shield 26 has slots (Figure 6) {Column 6, line 35 to Column 7, line 25 and Column 9, lines 30-45}. Further, the shield being configured to inhibit the deposition of material from the chamber onto the vacuum side of the dielectric chamber wall and to facilitate inductive coupling of RF energy from the antenna through the shield and into the chamber are inherent functions of the shield which the apparatus of prior art is normally capable of performing.

Drewery et al do not teach ionization source (antenna) having segmented configuration and with alternating high and low radiation sections.

Pu et al teach an inductive plasma apparatus (Figures 1, 3, 8, 9) that includes a plasma chamber with a dielectric lid 10, a coil array (antenna) 30 with coils 40, 42 such connected that alternating coil segments are arranged in a ring to couple power through the dielectric chamber wall into the chamber in an annular alternating high and low power distribution (Column 4, line 15 to Column 5, line 30 and Column 12, line 25 to Column 13, line 25). Therefore it would have been obvious to one of ordinary skill in the

art at the time of the invention to use antenna with segmented configuration as taught by Pu et al in the apparatus of Drewery et al to minimize eddy currents around the perimeter of chamber wall (Column 2, lines 51-58).

Regarding Claim 17: Drewery et al in view of Pu et al teach all limitations of the claim including that the apparatus is a semiconductor wafer processing apparatus (Drewery et al – Column 1, lines 10-15 and Pu et al - Column 1, lines 15-17).

Claims 2, 11-13, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drewery et al (US Patent No. 6,287,435) in view of Pu et al (US Patent No. 6,825,618) as applied to Claim 1 and further in view of Davis et al (US Patent No. 6,685,799).

Regarding Claims 2: Drewery et al in view of Pu et al teach all limitations of the Claim except that shield has segmented configuration with alternating low and high transparency sections.

Davis et al teach an apparatus (Figure 1) that includes a shield 40 for an inductive plasma apparatus. Davis et al further teach that shield 300 (Figure 3) can have segmented configuration and where each segment 320 can be individually configured for variable efficiency (transparency). Davis et al also teach that the invention also applies to plate type shields with segmented configuration (Figures 8-11), {Column 4, line 65 to Column 5, line 40 and Column 6, line 85 to Column 8, line 30).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use shield with segmented configuration as taught by Davis et al in the

apparatus of Drewery et al in view of Pu et al to provide variable shielding efficiency (Column 2, lines 5-10).

Regarding Claims 11: Pu et al teach that antenna comprises of coils segments 40, 42 formed of copper wire (conductor) 43 wound around a hollow coil form 50 and as explained above, the coil segments are arranged in a ring positioned to couple power into the chamber in alternating high and low power distribution (Column 5, lines 18-30).

Regarding Claims 12,13: Pu et al teach that design of coils 40 and 42 including their size, spacing, number of turns, diameter of coil array can be optimized depending upon size/shape of chamber, location of workpiece and other process considerations (Column 5, line 50 to Column 9, line 65 and Column 15, lines 1-68).

Further, regarding optimization, courts have held (Case law):

"Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. It would have been obvious to one having ordinary skill in the art to have determined the optimum values of the relevant process parameters through routine experimentation in the absence of a showing of criticality. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)."

Regarding Claim 15: Davis et al teach as explained above, a shield with segmented configuration of alternating high and low transparency sections arranged in a ring {Column 4, line 65 to Column 5, line 40 and Column 6, line 85 to Column 8, line 30}. Pu et al teach as explained above, an antenna with high and low radiation sections (Column 4, line 15 to Column 5, line 30 and Column 12, line 25 to Column 13, line 25). It would be obvious to one of ordinary skill in the art to align the shield so as to facilitate the coupling of power through the dielectric chamber such that the high-radiation sections of the peripheral ionization source (antenna) having included therein the high-

transparency sections of the shield and the low-radiation sections of the peripheral ionization source including the low-transparency sections of the shield, the high-efficiency sections of the antenna being aligned with the high- transparency sections of the shield and the low-efficiency sections of the antenna being aligned with the low-transparency sections of the shield.

Claims 3, 4, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drewery et al (US Patent No. 6,287,435) in view of Pu et al (US Patent No. 6,825,618) and Davis et al (US Patent No. 6,685,799) as applied to Claim 2 and further in view of Todorov et al (US PGPUB No. 2003/0006009).

Regarding Claims 3, 4: Drewery et al in view of Pu et al and Davis et al teach all limitations of the claim except shield having slots for high transparency sections and generally electrically conductive solid for low transparency sections.

Todorov et al teach an apparatus (Figures 2, 5, 6) that includes a plasma chamber 111 with a shield 120A that includes plurality of radially extending slots 112 (high transparency sections) in between plurality of copper conductors 211 (low transparency sections) {Paragraphs 0026, 0030, 0031}. Todorov et al also teach that shield 120A is flat and circular.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use shield having slots for high transparency sections and generally electrically conductive solid for low transparency sections as taught by Todorov et al in the apparatus of Drewery et al in view of Pu et al and Davis et al to minimize eddy current losses (Paragraph 0032).

Regarding Claim 6: Drewery et al teaches that apparatus functions as an ionized physical vapor deposition (IPVD) apparatus (Column 1, lines 10-15).

Claims 1, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brcka (US Patent No. 6,237,526) in view of Pu et al (US Patent No. 6,825,618).

Regarding Claim 1: Brcka teach an ICP source apparatus (Figures 1D) for producing a high-density inductively coupled plasma in a processing space 14 for processing a semiconductor wafer 18 therewith, the source comprising:

a dielectric chamber wall formed of at least one section 24a of dielectric material (window) and having a vacuum side and an atmospheric side;

a peripheral ionization source including an RF coil assembly (antenna) 10 on the atmospheric side of the dielectric chamber wall, and a deposition baffle/shield (protective shield) 15 on the vacuum side of the dielectric chamber wall. Brcka also teaches that inductive elements with segmented configuration and arranged in a ring form (Figures 6B-6D) can be used with the apparatus. Brcka further teach that shield 15 has plurality of slots. Brcka does not explicitly teach that the processing space is under vacuum, but such plasma processes are normally operated under vacuum. Further, the shield being configured to inhibit the deposition of material from the chamber onto the vacuum side of the dielectric chamber wall and to facilitate inductive coupling of RF energy from the antenna through the shield and into the chamber are inherent functions of the shield which the apparatus of prior art is normally capable of performing (Column 7, line 55 to Column 9, line 25 and Column 16, line 50 to Column 18, line 5).

Brcka teaches segmented antenna of various shapes/designs but does not explicitly teach antenna having alternating high and low radiation sections.

Pu et al teach an inductive plasma apparatus (Figures 1, 3, 8, 9) that includes a plasma chamber with a dielectric lid 10, a coil array (antenna) 30 with coils 40, 42 such connected that alternating coil segments are arranged in a ring to couple power through the dielectric chamber wall into the chamber in an annular alternating high and low power distribution (Column 4, line 15 to Column 5, line 30 and Column 12, line 25 to Column 13, line 25). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use antenna with segmented configuration as taught by Pu et al in the apparatus of Brcka to minimize eddy currents around the perimeter of chamber wall (Column 2, lines 51-58).

Regarding Claim 17: Brcka in view of Pu et al teach all limitations of the claim including that the apparatus is a semiconductor wafer processing apparatus (Brcka – Column 1, lines 1-10 and Pu et al - Column 1, lines 15-17).

Claims 2, 11-13, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brcka (US Patent No. 6,237,526) in view of Pu et al (US Patent No. 6,825,618) as applied to Claim 1 and further in view of Davis et al (US Patent No. 6,685,799).

Regarding Claims 2: Brcka in view of Pu et al teach all limitations of the claim except that shield has segmented configuration with alternating low and high transparency sections.

Davis et al teach an apparatus (Figure 1) that includes a shield 40 for an inductive plasma apparatus. Davis et al further teach that shield 300 (Figure 3) can have

segmented configuration and where each segment 320 can be individually configured for variable efficiency (transparency). Davis et al also teach that the invention also applies to plate type shields with segmented configuration (Figures 8-11), {Column 4, line 65 to Column 5, line 40 and Column 6, line 85 to Column 8, line 30).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use shield with segmented configuration as taught by Davis et al in the apparatus of Brcka in view of Pu et al to provide variable shielding efficiency (Column 2, lines 5-10).

Regarding Claims 11: Pu et al teach that antenna comprises of coils segments 40, 42 formed of copper wire (conductor) 43 wound around a hollow coil form 50 and as explained above, the coil segments are arranged in a ring positioned to couple power into the chamber in alternating high and low power distribution (Column 5, lines 18-30).

Regarding Claims 12,13: Pu et al teach that design of coils 40 and 42 including their size, spacing, number of turns, diameter of coil array can be optimized depending upon size/shape of chamber, location of workpiece and other process considerations (Column 5, line 50 to Column 9, line 65 and Column 15, lines 1-68).

Further, regarding optimization, courts have held (Case law):

"Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. It would have been obvious to one having ordinary skill in the art to have determined the optimum values of the relevant process parameters through routine experimentation in the absence of a showing of criticality. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)."

Regarding Claim 15: Davis et al teach as explained above, a shield with segmented configuration of alternating high and low transparency sections arranged in a ring {Column 4, line 65 to Column 5, line 40 and Column 6, line 85 to Column 8, line 30}. Pu et al teach as explained above, an antenna with high and low radiation sections (Column 4, line 15 to Column 5, line 30 and Column 12, line 25 to Column 13, line 25). It would be obvious to one of ordinary skill in the art to align the shield so as to facilitate the coupling of power through the dielectric chamber such that the high-radiation sections of the peripheral ionization source (antenna) having included therein the high-transparency sections of the shield and the low-radiation sections of the peripheral ionization source including the low-transparency sections of the shield, the high-efficiency sections of the antenna being aligned with the high- transparency sections of the shield and the low-efficiency sections of the antenna being aligned with the low-transparency sections of the shield.

Claims 3, 4, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brcka (US Patent No. 6,237,526) in view of Pu et al (US Patent No. 6,825,618) and Davis et al (US Patent No. 6,685,799) as applied to Claim 2 and further in view of Todorov et al (US PGPUB No. 2003/0006009).

Regarding Claims 3, 4: Brcka in view of Pu et al and Davis et al teach all limitations of the claim except shield having slots for high transparency sections and generally electrically conductive solid for low transparency sections.

Todorov et al teach an apparatus (Figures 2, 5, 6) that includes a plasma chamber 111 with a shield 120A that includes plurality of radially extending slots 112 (high

transparency sections) in between plurality of copper conductors 211 (low transparency sections) {Paragraphs 0026, 0030, 0031}. Todorov et al also teach that shield 120A is flat and circular.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use shield having slots for high transparency sections and generally electrically conductive solid for low transparency sections as taught by Todorov et al in the apparatus of Brcka in view of Pu et al and Davis et al to minimize eddy current losses (Paragraph 0032).

Regarding Claim 6: Brcka teaches that apparatus can function as an ionized physical vapor deposition (IPVD) apparatus (Column 7, lines 45-55).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 28-30, 37-39, 58-63 of U.S. Patent No. 6,237,526 in view of Pu et al (US Patent No. 6,825,618).

Claims 28-30, 37-39, 58-63 of the patent teach an apparatus for producing an inductively coupled plasma in a vacuum chamber for processing a semiconductor wafer therewith, the source comprising:

a dielectric chamber wall formed of at least one section of dielectric material (window) and having a vacuum side and an atmospheric side;

a plasma source including an RF coil assembly (antenna) with segments in aring form and on the atmospheric side of the dielectric chamber wall, and a deposition baffle/shield (protective shield) with slots on the vacuum side of the dielectric chamber wall.

Claims 28-30, 37-39, 58-63 do not teach the ionization source (coil) having alternating high and low radiation sections.

Pu et al teach an inductive plasma apparatus (Figures 1, 3, 8, 9) that includes a plasma chamber with a dielectric lid 10, a coil array (antenna) 30 with coils 40, 42 such connected that alternating coil segments are arranged in a ring to couple power through the dielectric chamber wall into the chamber in an annular alternating high and low power distribution (Column 4, line 15 to Column 5, line 30 and Column 12, line 25 to Column 13, line 25).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use antenna with alternating high and low radiation sections as taught by Pu et al in the apparatus as per claims 28-30, 37-39, 58-63 of Patent No. 6,237,526 to minimize eddy currents around the perimeter of chamber wall (Column 2, lines 51-58).

Conclusion

Shin et al (US PG PUB No. 2001/0022157) teach an inductive coupled plasma apparatus (Figures 8, 9) that includes a vacuum chamber 20, a coil 44, dielectric window 42, shield 80/84 with slits 88.

Brcka (US Patent No. 6,474,258) teaches an apparatus (Figure 6B-D) that comprises inductive elements for plasma processing apparatus and where the inductive elements utilize repeated conductor segments arranged in anon-coil fashion and are suitable for use with a planar dielectric window to couple energy into a plasma for producing ring shaped plasma (Column 18, line 60 to Column 21, line 20).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rakesh K. Dhingra whose telephone number is (571)-272-5959. The examiner can normally be reached on 8:30 -6:00 (Monday - Friday). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571)-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rakesh Dhingra

Parviz Hassanzadeh
Supervisory Patent Examiner
Art Unit 1763